REMARKS/ARGUMENTS

The claims are 4, 5, 7, 8 and 10-16. Claim 15 has been amended to better define the invention and to incorporate subject matter previously appearing in claim 3. Accordingly, claim 3 has been canceled. In addition, claim 9 has been canceled in favor of new claim 16 and claims 10 and 13, which previously depended on claim 9, have been amended to depend on new claim 16. Support for the claims may be found, *inter alia*, in the disclosure at pages 6-8 and 10 and in the original claims. Reconsideration is expressly requested.

Claims 9-10 and 13 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite because in the Examiner's view it was unclear as to what was being referred to as the "body length" in claim 15. According to the Examiner, FIG. 3 indicates that the piston head is not movable along the "pump body length" when the hose bracket sleeve is attached as seen in FIG. 3.

In response, Applicants have amended claim 15, *inter alia*, to specify that the pump body length is the length between the

pump body proximal end and the pump body distal end and have canceled claim 9 in favor of new claim 16 which specifies that the end piston head is movable along the pump body length from the pump body proximal end to the attached LuerLock at the pump body distal end. As recited in claim 15 as amended, the piston head is movable along the entire pump body length wherein the pump body length is the length between the pump body proximal end and the pump body distal end. As can be directly derived from FIGS. 2-3, the piston head is movable from the pump body proximal end to the pump body distal end. If the injection pump comprises a hose bracket sleeve with an attached rotatable male LuerLock at the pump body distal end as recited in new claim 16, the piston head is movable from the pump body proximal end to the attached LuerLock at the pump body distal end.

It is respectfully submitted that the foregoing amendments overcome the Examiner's rejection under 35 U.S.C. 112, second paragraph, and Applicants respectfully request that the rejection on this basis be withdrawn.

Claims 3-5, 7 and 14-15 were rejected under 35 U.S.C. 102(b)

as being anticipated by *Schmitz U.S. Patent No. 3,724,076*. Claim 15 (and presumably claims 3-5, 7 and 14) were also rejected under 35 U.S.C. 102(b) as being anticipated by *Clark U.S. Patent No. 4,801,263*. The remaining claims were rejected under 35 U.S.C. 103(a) as being unpatentable over either *Schmitz* or *Clark* in view of *Fischione U.S. Patent No. 4,655,749* (claim 8), *Century U.S. Patent No. 5,513,630* (claims 9-10 and 13), or *Baidwan et al. U.S. Patent No. 5,238,003* (claims 11-12).

In response, Applicants have amended claim 15 to better define the invention and respectfully traverse the Examiner's rejection for the following reasons.

As set forth in claim 15 as amended, Applicants' invention provides an injection pump for application of highly viscous media that have to be applied with pressure during percutaneous vertebroplasty. The injection pump includes a pump body, a pump body grip, and a piston system. The pump body includes a flexible or ductile plastic material and has a pump body proximal end, a pump body distal end, and a pump body length. The pump body grip is fastened at the pump body proximal end, and the

piston system includes a rigid first piston rod having a first piston rod proximal end and a first piston rod distal end, a flexible second piston rod connected to the first piston rod at the first piston rod distal end and having a second piston rod distal end, a first piston rod grip connected to the first piston rod at the first piston rod proximal end, and an end piston head at the second piston rod distal end for taking up bone cement.

As recited in claim 15 as amended, the end piston head is movable along the entire pump body length between the pump body distal end and the pump body proximal end, wherein the pump body length is the length between the pump body proximal end and the pump body distal end.

Contrary to the Examiner's position, neither *Schmitz* nor *Clark* disclose or suggest an injection pump for application of highly viscous media having the structure set forth in claim 15 as amended, wherein the pump body includes a flexible or ductile plastic material so that the pump body itself is flexible or ductile. *Schmitz* merely discloses that the cylinder assembly can be conveniently made from molded plastic. The molded plastic,

however, is usually rigid, as can also be deduced from the figures presented by *Schmitz*. Although the Examiner relies on column 1, lines 65-67 of *Clark* as disclosing a pump body including a ductile plastic, it is respectfully submitted that the Examiner's position is unfounded as the cited portion refers to a flexible plunger and not to a flexible cylinder element. Moreover, as can be directly deduced from the figures and the corresponding description, the entire pump body of the injection pump depicted by *Clark* is rigid.

Applicants' injection pump with the flexible pump body yields a number of advantages for the operating doctor, such as a more convenient handling of the injection pump, particularly as far as the positioning of the nozzle of the injection pump is concerned. Because Applicants' pump body is flexible along the entire length of the pump body, Applicants' injection pump is particularly convenient for the doctor.

The remaining references cited by the Examiner have been considered but are believed to be no more relevant. None of these references discloses or suggests an injection pump for

application of highly viscous media having the structure set forth in Applicants' claim 15 as amended or the benefits that are achieved by that structure.

New claim 16, like claim 15 as amended, specifies a pump body including a flexible or ductile plastic material. New claim 16 also specifies that the end piston head is movable along the pump body length from the pump body proximal end to the attached LuerLock at the pump body distal end. It is respectfully submitted that these features are nowhere disclosed or suggested by any of the references cited by the Examiner. Accordingly, it is respectfully submitted that new claim 16 is patentable over the cited references as well.

The dependent claims are dependent directly or indirectly on claim 15 as amended or new claim 16, and therefore, it is respectfully submitted, are patentable for the same reasons applicable with respect to claim 15 as amended and new claim 16, respectively.

In summary, claims 3 and 9 have been canceled, claims 10, 13 and 15 have been amended, and new claim 16 has been added. In view of the foregoing, it is respectfully requested that the claims be allowed and that this application be passed to issue.

Respectfully submitted,
Thomas DUNKER ET AL.

COLLARD & ROE, P.C.
1077 Northern Boulevard
Roslyn, New York 11576
(516) 365-9802

Frederick J. Dorchak, Reg. No.29,298
Edward R. Freedman, Reg. No.26,048
Attorneys for Applicants

FJD:cm

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: MAIL STOP AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on February 12, 2010.

Amy Klein

R:\Patents\D\DUNKER ET AL-2 PCT\RCE\Amendment in Response to First OA in RCE.wpd